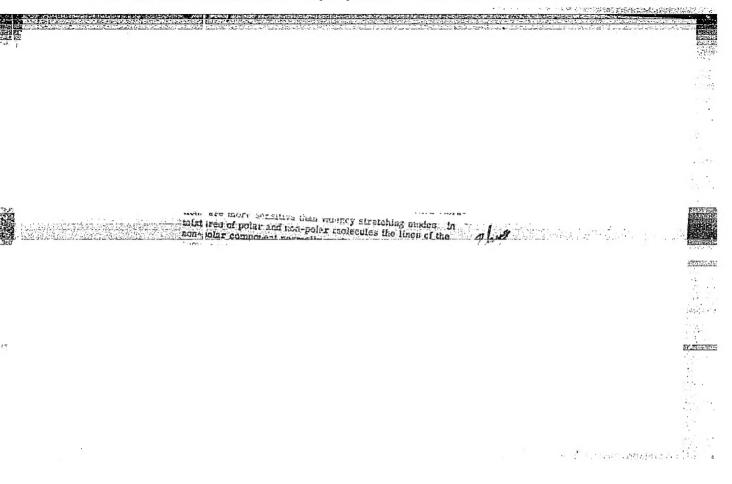
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IAZAREV, A.N.; TULIB, T.P.; BOBOVICH, Ya.S.

Raman spectra of certain alkoxypolysiloxanes. Opt. 1 spektr. 4
no.3:417-418 Mr '58. (MIRA 11:4)

1. Cosudarstvennyy optichesk'y institut im. S.I. Vavilova i Institut
khimii silikatov AN SSSE. (Siloxanes-Spectra)

AUTHORS: Lazarev, A.N., Tulub, T.P. and Bobovich, fa.S. 51-4-3-28/30

TITIE:

Rauan Scattering Spectra of Certain Alkoxypolysiloxenes (O spektrakh kombinatsionnogo rasseyaniya nekotorykh

alkoksipolisiloksanov.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.5, pp. 417-418 (USSR)

ABSTRACT:

Study of the structure of products of hydrolytic condensation of esters of orthosilicic acii

(alkoxypolysiloxanes) is of great interest because of many technical applications of silico-organic compounds. Such studies may be also useful in eluci-Such studies may be also useful in elucidation of the spectra of silicates. The authors obtained photographically and photoelectrically Raman

scattering spectra for the following compounds: Si(OCH₃)4, (CH30)3SiOSi(OCH3)3, Si(OC2#5)4,

 $(C_2H_50)_3$ SiOSi $(0C_2H_5)_3$, (C2H50) 3SiOSi(OC2H5) 2OSi(OC2H5) 3.

The measured values of frequencies in cu-l, of the relative intensities and the degree of depolarization of lines are given in the table on p.417. To measure

the intensities and the degree of depolarization of Card 1/2 lines the photoelectric apparatus described in Ref.l

Raman Scattering Spectra of Certain Alkoxypolyciloxan sp

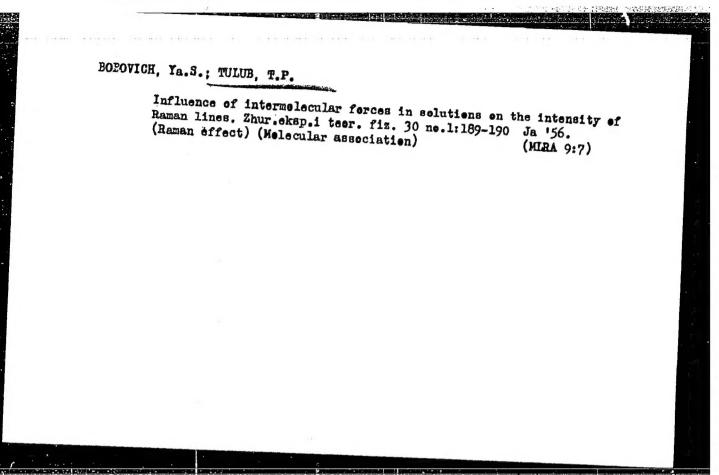
was used. The figure on p.413 gives, by way of example, the polarized spectra of tetranethoxysilane (curves a) and hexamethoxydisiloxane (curves b). A preliminary brief discussion of the results obtained is given. There are 1 table, 1 figure and 4 references of which 2 are Mortot, 1 French and 1 Swiss.

ASSOCIATION: State Optics Institute imeni S.I. Vavilov;
Institute for Silicate Chemistry, Academy of Sciences
of the USSR
(Gosudarstvennyy opticheskiy institut im. S.I.
Vavilova, Institut khimii silikatov AN SSSR.)

SUBMITTED: July 15, 1957.

1. Orthosilicic acid-Esters 2. Esters-Hydrolytic condensation 3. Alkozypolysiloxanes-Scattering 4. Ramen

Card 2/2



BOBOVICH, Ya.S., GIRIN, O.P., TULUB, T.P.

A possible interpretation of the vibration spectra of simple silicate glasses. Dokl. AN SSSR 105 no.1:61-64 N '55. (MLRA 9:3)

1. Predstavleno akademikom A.H. Tereninym. (G? 188--Spectra)

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757420003-2

ENT(1)/ENT(D)/ENP(e) WH SOURCE CODE: UR/0237/60/000/002/0009/0017 AUTHOR: Bobovich, Ya. S.; Tulub, T. P. 64 B ORG: TITIE: Combination scattering as a method for the study of the structure of inorganic glasses SOURCE: Optiko-merhanicheskaya promyshlennost', no. 2, 1960, 9-17 TOPIC TAGS: IR spectroscopy, combination scattering, chemical bonding, silicate glass, nolecular structure ABSTRACT: Using a number of examples, the authors attempt to prove the possibilities and characteristics of the method of combination scattering, particularly in the case of silicate systems. A detailed report on the factual material used in this attempt was published by the authors in an earlier paper (UFN, 66, 1958, p. 3). In order to study the oscillating movements of the atoms of a molecule, the authors constructed a N system, using small balls connected by springs with each other. The balls represent atoms and the springs, elastic forces which act between the atoms. The system N could accomplish 3N-6 independent oscillations. Not all these oscillations show up in the spectra of combination scattering. In order for an oscillation to become active in scattering, it must be accompanied by changes in the polarizability of a **Card** 1/2

L 25717-66	
ACC NR: AP6002800	-
single bond or the entire molecule. In the case of the infra-red spectroscopy method, enother value is valid: a change in the dipole moment of the molecule during the oscillation of its atoms. Based on these facts, the authors claim that the scattering intensity characterizes definitely the type of bond. This is true in the case of oscillations of diatomic molecules and individual bonds in polyatomic molecules. The oscillations conclude that data on the relative intensity of combination scattering bonds authors conclude that data on the relative intensity of combination scattering bonds is supported by the Pauling electronegative scale. It is possible to assume that further precision measurements of intensity will provide an answer to this important and difficult problem. Orig. art. has: 10 figures.	. 2.
SUB CODE: 07 / SUMM DATE: 22Sep59/ ORIG REF: 017/ OTH REF: 014	. 44
	-
Card 2/2 (.	

NEMCHENKO, A.M.; TULUBOVSKAYA, Ye.Ya.

Carrying out large-scale rat extermination with Isachenko's bacterial culture. Zdrav.Belor. 3 no.10:54-55 0 157.

(MIRA 13:6)

1. Iz Grodnenskoy oblastnoy sanitarno-spidemiologicheskoy stantsii (glavnyy vrach V.A. Aleksandrovich). (GRODNO-RATS-EXTERMINATION)

TULUKIDZE, P.

Light concretes with natural aggregates, and their application in bridge construction and civil and hydraulic engineering. p.173

HIDROTEHNICA. (Associatia Stintifica a Inginerilor si Tehnicienelor din Romina) Bucuresti, Romania Vol. 4, no.6, June 1959

Monthly List of East European Accessions (EFAI) LC, Vol. 9, no. 2, Feb. 1960 Uncl.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2"

KUZNETSOV, Yevgeniy Semenovich: Prinimeli uchestiye: RYTCHENKO, V.I.; OHLOV, V.P.; HUBETS, D.A.; ZAYATS, T.P.; KUROPTEV, V.T.; LEYDEFMAN, S.R.; NOSOV, L.I.; SCKOLOV, O.V.; TULUKOV, G.A.; SHIBIF, P.V. LESNYAKOV, F.I., red.; DONSKAYA, G.D., tekhn.red.

[Efficient systems of maintenance and methods for their correction]
Ratsicnal nye rezhimy tekhnichaskogo obsluzhivania i metodika ikh
korrektirovania. Moskva, Avtotransizdat. Pt.2. [Second stage of
motor vehicle maintenance] Vtoros tekhnichaskog obsluzhivania.
1960. 98 p. (MIRA 14:3)

(Motor vehicles--Maintenance and repair)

TULUKOVA, K. I., SVESHRIKOVA, H. P., KOKOVIN, I. L., SAKRARTSEVA, T. F., TERSKIKH, V. I.

"Leptospirosis foci on filtration fiedls." p. 163

Desystoye Soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR. No. 1 254pp.

Inst. of Epidemiology and Microbiology, AMS USSR/ Moscow and the Moscow Oblast Sanitary-Epidemiological Station

TUNKEYH, KIL

TERSKIKH, V.I.; TULUKOVA, K.I.; SYESHNIKOVA, N.P.

Field rice as carriers of the causative agent of leptospirosis type II (moniskov) in the vicinity of rivers and fleed lands. Zhur.mikrobiol.epid. i immun. 28 no.4:115-118 ap 157. (MIRA 10:10)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gemelei AMN SESR i Moskovskoy oblastnoy protivotulyaremiynoy stantsii.
(LEPTOSPIROSIS, transmission
by field mice in vicinity of rivers, control)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2

TULUKOVA, K. I.
Acad Med Soi USSR.

TULUKOVA, K. I.- "A comparative study of experimentally obtained alkali-producers and B. f faecalis alcoligenes." Acad Med Sci USSR. Moscow, 1955.

(Dissertation for the Degree of Candidate in Medical Sciences)

SO: Knizhnaya Letopis' No. 20, 1956

ULUKO VA,

USSR /Microbiology. General Microbiology.

F-1

Abs Jour: Referat.Zh.-Biol., No. 9, 1957, 35486

Author: Tulukova, K.L.

: A Comparative Study of Experimentally Obtained Title

Alkaline-formers and B. faecalis alcaligenes.

Orig Pub: V sb.: Izmenchivost organismov. M., Medgiz, 1956,

104-112

The properties were studied of 21 strains of Abstract:

experimentally obtained alkaline-formers and from 102 strains alkaline-formers which had been isolated from organisms which had been sick with chronic dysentary (99 strains) and from standard strains (3 strains). Attempts to isolate cultures of alkaline-formers in healthy children who did not have a history of intestinal diseases

Card 1/2

USSR /Microbiology. General Microbiology.

F-1

Abs Jour: Referat.Zh.-Biol., No. 9, 1957, 35486

were unsuccessful. Morphological and culture-biochemical differences in both groups of alkaline-formers were not noted. Both, the experimentally obtained and the isolated alkalilence of the latter is a little higher. The antigen properties of all the strains of both of experimentally obtained alkaline-formers in strains of isolated alkaline-formers in strains of isolated alkaline-bearers was shown experimentally obtained, and also the presence faecal alkaline-formers could be formed from intestinal bacilli and pathogenic intestinal bac-

Card 2/2

FULLIMDZHYAN, A.O.; DZIDZARIYA, G.A., redaktor; KHAKHMIGERI, M.D.,
teknnicheskiy redaktor

[Abkhazian Economic Council; catalog of its collection] Ekoso
Abkhazii; opisanie fonda. Sukhumi, Abkhazskoe gos.izd-vo, 1956.
29 p.

1. Abkhazskiy Ekonomicheskiy Sovet
(Abkhazia--Economic policy)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2

- 1. TULUNIN. B.
- 2. USSR (600)
- 4. Grain
- 7. High yields of grain from the whole seeded area, Kolkh. proizv. 13 No. 2, 1953

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

MININ, Dionisty Denilovich; TULININ, B.M., red.; ZUBRILIMA, Z.P., tekhn.red.

[Gathering and storing tree and shrubbery seeds] Shor i khramenie semian drevesnykh i kustarnikovykh porod. Izd. 3-e, ispr. i dop. Hoskva. Gos. izd-vo sel'khoz. lit-ry, 1957. 103 p. (MIRA 11:2) (Seeds)

TULUNIN, Boleslav Nikolayevich; DMITRIYEVA, L.A., red.; YELAGIN, A.S., tekhn. red.

[The A B C of feed units] Azbuka kormovykh edinits. Moskva, Sovetskaia Rossiia, 1962. 124 p. (MIRA 15:32)

(Feeds)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2

BRAGINA, Frida Grigor'yevna; NIKITIN, P.D.; SAVCHENKO-BEL'SKIY, A.A.;

ROZHKOVA, T.D., redaktor; TULUNIN, B.N., redaktor; BALLOD, A.I.,

tekhnichaskiy redaktor

[Growing shelterbelts; techniques and werk organization] Vyrashchiva
nie polesashchitnykh lesnykh polos; tekhnika i organizatsiia rebot.

Moskva, Gos. izd-vo sel'khoz.lit-ry, 1957. 132 p. (MLRA 10:8)

(Windbreaks, shelterbelts, etc.)

ACC NR. AT6022359

SOURCE CODE: UR/0000/66/000/000/0069/0076

AUTHOR: Gorokhov, V. A.; Koshelyayev, G. V.; Tulunkin, G. P.

ORG: none

TITLE: Photosensitive semiconductor capacitors (photovaricaps)

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya poluprovodnikovykh priborov. Doklady. Moscow, 1966, 69-76

TOPIC TAGS: photosensitivity, electronically variable capacitor, varicap,

ABSTRACT: Several uses of semiconductor photosensitive capacitors, photovaricaps, for amplification of weak photocurrents are given. The use of photovaricaps in a circuit that indicates shifts of weak light rays and a switching circuit triggered by light is also given. Two types of photoamplifiers are discussed; in both of them temperature changes of the photovaricap capacitance are eliminated by interrupting the light beam that is amplified. The first type has a low interruption frequency (20 cps); it uses FDK-1 photovaricaps made from gallium arsenide and is capable of amplifying photocurrents of 5 x 10-12 a with a good signal-to-noise ratio. The second type has a high interruption frequency (2 kc); it also uses FDK-1 photovaricaps and is capable of amplifying photocurrents of 2 x 10-11A with a signal-to-noise ratio of 10. The operating thresholds for either state (on and off) of the light-triggered switching circuit are equal to 0.4 x 10-31m; the circuit uses FDK-1 photovaricaps, and germanium and

Card 1/2

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L 15435-63 EWF(1)/EPF(c)/EWT(m)/BDS Po-4/Pr-4 DE/RM/WW ACCESSION NR: AP3005446 8/0204/63/003/004/0494/0497

AUTHORS: Shuykin, N. I.; Tulunova, Ye. D.; Ostapenko, E. G.

TITLE: Separation of methylcyclopentadiene from the products of catalytic dehydration of methylcyclopentene

SOURCE: Neftekhimiya, v. 3, no. 4, 1963, 494-497

TOPIC TAGS: methylcyclopentadiene separation, methylcyclopentene dehydration, methylcyclopentene, methylcyclopentadiene, methylchlorocyclopentane, metallic sodium, adsorption chromatography

ABSTRACT: Authors attempted to find a new way of synthesizing methylcyclopentadiene and separating it from a mixture of other hydroparties. The synthesis of methylcyclopentadiene was carried out through a stepwise chlorination of methylcyclopentane fraction and a catalytic dehydrochlorination of the formed methylchlorocyclopentanes to methylcyclopentenes which are dehydrated to methylcyclopentadiene in the presence of catalytic oxides. Two methods of separation of methylcyclopentadiene from the hydrocarbon mixtures were developed: one

Card 1/2 NOTE. Wresever Appearing, "dehydration" should read

L 15485-63

ACCESSION NR: AP3005446

consists in the reaction of the catalyzed mixture with metallic sodium, forming sodium methylcyclopentadienyl which is decomposed in water. The yield of methylcyclopentadiene is 91-92% with a purity of 94-96%. The impurity in the above product is cyclopentadiene. The second method of separation consists in the dimerization of the catalyzed mixture at 68C and atmospheric pressure for a period of 14 hours. The yield of the dimer is 97%. Depolymerization takes place by gradually heating it from 175 to 260C. The yield obtained by this method is 99% of methylcyclopentadiene with a purity of 92%. The quantitative determination of methylcyclopentadiene found in the catalytic dehydration of methylcyclopentene mixtures is made by adsorption chromatography. Orig. art. has: 1 formula and 2 tables.

ASSOCIATION: Institut organicheskoy khimii AN SSSR im. N. D. Zelinskogo (Institute of organic chemistry, AN SSSR)

SUBMITTED: 27Mar63

DATE ACQ: 06Sep63

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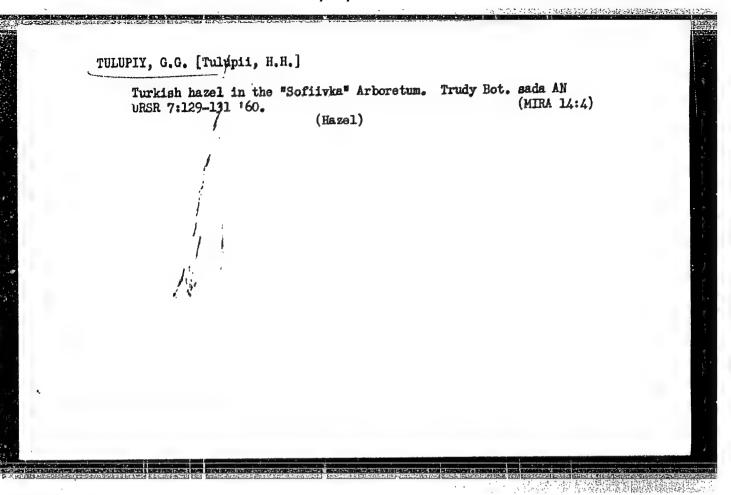
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006

OTHER: 015

Card 2/2



KRIVUL'KO, Densi Stepanovich[Kryvul'ko, D.S.]; REVA, Mikhail
Lukich; TULUPIN, Grigoriy Grigor'yevich [Tulupii, H.H.];
KONDRATCUK, Te.M., kand. biol. nauk, otv. red.; KOVAL', V.A.,
red. izd-va; KADASHEVICH, O.A., [Kadashevych, O.A.], tekhn.
red.

["Sofievka" Arboretum] Dendrologichryi park "Sofiivka." Kyiv,
Vyd-vo Akad. nauk URSR, 1962. 81 p. (MIRA 15:7)

(Uman'---Arboretums)

FEDORENKO, N.; TULUPNIKOV, A.

Economic efficiency of the chemicalization of stockbreeding. Vop. ekon. no.1:66-73 J_a 164. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Fedorenko). 2. Chlen-korrespondent Vsesoyuznov akademii sel¹skokhozyaystvennykh nauk im. Lenina (for Tulupnikov).

GORDEYEV, C.S., prof.; YAKUSHKIN, D.I.. Prinimali uchastiye: GORSKAYA, N.V.;

GRANOVSKAYA, A.Ye.; YEVSTIGNEVEVA, Yu.G.; KRYLOV, M.V.; LEYKIN, D.I.;

MAKHOVETSKIY, V.B.; MEYENDOHF, A.L.; HAZAHENKO, V.I.; HICHIPORUK,

O.K.; PAVLOV, L.I.; RUMYANTSEVA, N.V.; SOSENSKIY, I.I.; CHERNEVSKIY,

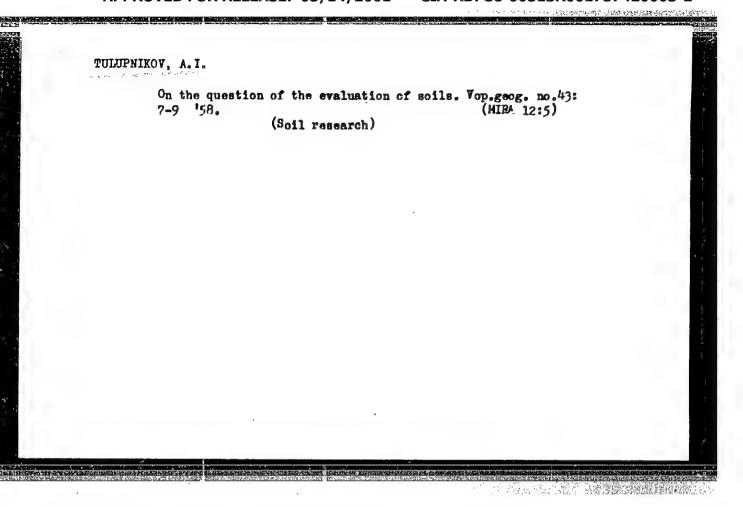
Yu.V., TULUPNIKOV, A.I., red.; SOLOV'YEV, A.V., prof., red.;

RAKITINA, Ye.D., red.; ZUBRILINA, Z.P., tekhn.red.

[Agriculture in capitalist countries; a statistical manual] Sel'skoe khoziaistvo kapitalisticheskikh stran; statisitcheskii sbornik.
Moskva, Gos.izd-vo sel'khoz.lit-ry, 1958. 247 p. (MIRA 12:5)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyayastva. 2. Otdel nauchnoy informatsii po ekonomike i organizatsii sel'skogo khozyayastva zarubezhnykh stran Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for all except Tulupnikov, Solov'yev, Rakitina, Zubrilina). 3. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for Tulupnikov). 4. Zamestitel' direktora Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for Solov'yev).

(Agriculture--Statistics)



"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2

TULUPNIKOV, A.: BATOVA, N.

"Principles and methods of preparing scientifically tested agricultural systems based on zones"

Sbornik. Rada Zemedelska Ekonomika. Praha, Czechoslovakia. Vol. 32, no. 1, Jan 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclas

TULUPNIKOV. A.I.. Prinimali uchastiye: BAKULIN, I.I.; VIKHLYAYEV, A.P.;

DUBOROV, N.T.; KABANOV, P.N.; PIS'MENNYY, I.G.; POPOV, N.I..

SOLOV'YEV, A.V., prof., doktor ekon.nsuk, retsenzent; MAKARUV, N.P.,

prof., doktor ekon.nsuk, retsenzent; GORYACHKIN, M.I., kend.nsuk,

retsenzent; OKHAPKIN, K.A., kand.nsuk, retsenzent; RUSAKOV, G.K.,

kand.nsuk, retsenzent; MURATOV, D.G., kand.nsuk, retsenzent; CHERE
MUSHKIN, S.D., kand.nsuk, retsenzent; TOLOV, V.V., retsenzent.

[Economic basis for agricultural administration] Voprosy ekonomichaskogo obosnovaniia sistem vedeniia sel'skogo khoziaistva. Moskva, 1960. 275 p. (MIRA 13:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel skiy institut ekonomiki sel skogo khozyaystva. 2. Vsesoyuznyy nauchno-issledovatel skiy institut ekonomiki sel skogo khozyaystva (for Bakulin, Vikhlyayev, Duborov, Kabanov, Pis mennyy, Popov.)

(Farm management)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2

TULIPNIKOV, A. I.

"The Rational Organization of Agricultural Enterprises in the USSR." report presented at ECE Ad Hoc Meeting of Experts on Farm Rationalization, Geneva, October 20, 1961.

DUPAL, Yaroslev [Dupal, Jaroslav]; GAVLICHEK, Yaromir [Havlicek, Jaromir]; STOCHES, Ferdinand [Stoces, Ferdinand]; BARTUNEK, Iosif [Bartunek, Josef]; LEVITMAN, Ye.A.[translator]; TULUFNIKOV, A.I., red.; SUMNIK, Z.A., red.; IL'YUSHENKOVA, T.P., tekhn. red.

[Problems in determining the effectiveness of agricultural production in Czechoslovakia] Voprosy opredeleniia effektivnosti sel'skokhoziaistvennogo proizvodstva v Chekhoslovakii. Pod red. A.I.Tulupnikova. Moskva, Gosstatizdat, 1962. 178 p. Translated from the Czech. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut narodnokhozyaystvennogo planirovaniya pri Gosudarstvennoy planovoy komissii, Chekhoslovakiya (for Dupal, Gavlichek). 2. Gosudarstvennaya planovaya komissiya, Chekhoslovakiya (for Bartunek). (Czechoslovakia—Agriculture—Economic aspects)

TULUPNIKOY, L.A.; SOLOV'YEY, A.V.; BATOVA, N.T.; GAVRILOV, V.I., kand. ekonom.nauk; SHIMKO, N.I.; POLOVENKO, I.S., kand.ekonom.nauk; POTAPOV, Kh.Ye., red.; OVCHINNIKOV, N.G., red.; POHOMAREVA, A.A., tekhn.red.

[Problems pertaining to long-range planning and systems of management on collective and state farms] Voprosy perspektivnogo planirovaniia i sistemy vedeniia khoziaistva v kolkhozakh i sovkhozakh. Moskva, Gosplanizdat, 1960. 681 p.

(MIRA 14:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel skiy institut ekonomiki sel skogo khozyaystva. 2. Chlen-korrespondent Vsesoyuznoy akademii sel skokhozyaystvennykh nauk imeni V.I.Lenina; direktor Vsesoyuznogo nauchno-issledovatel skogo instituta ekonomiki sel skogo khozyaystva (for Tulupnikov). 3. Zamestitel direktora Vsesoyuznogo nauchno-issledovatel skogo instituta ekonomiki sel skogo khozyaystva (for Gavrilov). 4. Rukovoditel otdela Vsesoyuznogo nauchno-issledovatel skogo instituta ekonomiki sel skogo khozyaystva (for Polovenko).

(Collective farms) (State farms)

MAYEVSKIY, V. (Nostovskaya oblast', g.Krasnyy Sulin); STONIS, V. (Komi ASSR, Vorkuta); TULUFOV, A. (Ryazanskaya oblast', Yekshurskaya shkola); PLAVIL'SHCHIKOV, N.N., prof., doktor biologicheskikh nauk Herald of a young naturalist. IUn. nat. no.12:24-25 D '61.

(Birds--Behavior) (Ants)

TULUMOV, M.H.

AUTHOR: Tulupov, A.A. and Tsuy Fun; Engineers.

130-8-12/20

TITLE:

Manipulating Rolls for Continuous-billet Mills (Kantuyushchiye valki dlya nepreryvno-zagotovochnykh stanov)

PERIODICAL: Metallurg, 1957, No.8, pp. 30 - 32 (USSR).

ABSTRACT: The authors state that serious difficulties arose at the An'shan (China) Metallurgical Combine when an attempt was made to use on the 600 continuous-billet mill the design of rollers for rotating the work successfully applied at the Magnitogorsk Metallurgical Combine (Magnitogorskiy Metallurgicheskiy Kombinat). They attribute this failure to the fact that on the Chinese mill there was insufficient room to place the manipulating rolls behind the stand. They describe the solution of the difficulty by using hollow rolls rotating about cylinders welded to the housing of the stand. The bronze bearings first used in the hollow rolls failed rapidly and were replaced by fabric ("textolite") ones, developed by An'shan personnel, together with Engineers A.A. Tulupov and B.V. Merekin. Details of the rolls and bearings and the cooling/lubricating systems adopted are given by the authors together with data on durabilities of the passes, bearings and supporting cylinders for cardl/2 216 x 132 mm. There are 3 figures.

Manipulating Rolls for Continuous-billet Mills.

130-8-12/20

ASSOCIATION:

Magnitogorsk Metallurgical Combine (Magnitogorskiy Metallurgicheskiy Kombinat) and An'shan Metallurgical Combine (An'shan Metallurgicheskiy Kombinat KNR)

AVAILABLE: Library of Congress.

Card 2/2

CIA-RDP86-00513R001757420003-2" APPROVED FOR RELEASE: 03/14/2001

TULUPOV, A.A., inzhener; TSUY FUN' [Ts'ui Fun], inzhener.

Beveling rolls for continuous billet rolling mills. Metallurg 2
no.8:30-32 Ag '57. (MIRA 10:9)

1. Magnitogorskiy metallurgicheskiy kombinat (for Tulupov).
2. An'shan'skiy metallurgicheskiy kombinat, Kitaystaya Narodnaya Respublika (for Ts'ui'Fun).

(Rolls (Iron mills))

TULUFOV, A.M., red.; TERTYSHNIK, C.A., red.; YASHEN'KINA, Ye.A.,

tekhn.red.

[Sunflower, a valuable industrial crop] Podsolnechnik teennaia tekhnicheskaia knl'tura. Kuibyshev, Kuibyshevskoe
knizhnoe izd-vo, 1961. 41 p. (MIRA 14:1)

(Sunflowers)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2"

43379 S/056/62/043/005/044/058 B125/B104

24.6300

AUTHORS:

Lazareva, L. Ye., Tulupov, B. A.

TITLE:

On a method of investigating the optical anisotropy and the

shape of the surface of atomic nuclei

PERIODICAL:

Zhurnal eksperimental noy i teoreticheskoy fiziki, v. 40,

no. 5(11), 1962, 1910-1913

TEXT: The method proposed is based on finding the direction \vec{n} from which charged subbarrier particles are emitted from a nucleus after a photonuclear reaction. \vec{n} is the unit vector of the major axis of deformation of the nucleus. In the photodisintegration of deformed nuclei there are two groups of transitions: The one group is associated with the direction \vec{n} ($\omega \approx \omega_1$). The second group of transitions ($\omega \approx \omega_1$) refers to the two other axes perpendicular to \vec{n} . In the first group of transitions the amplitude $\vec{r}(\vec{p},\vec{n})$ of departure of a charged subbarrier particle (\vec{p} is the wave vector of the departing particle) in the coordinate system linked to the residual nucleus has sharp maxima at the angles 0° and 180° . The departing particles in the lab system have the angular distribution $d\sigma/d2 \sim \sin^2\theta + \Delta(1)$

Card 1/3

S/056/62/043/005/044/056 B125/B104

On a method of investigating. ...

if ∆E/E≪1, if the rotational level of a product nucleus is not fixed, if the photons are not polarized, and if the nuclei are not oriented. $\Delta \Sigma$ is the energy of the rotational levels of the residual nuclei, E is the energy of the departing nuclei, ϑ is the angle between the momenta of the photon and of the departing particle. Estimates of $\Delta \approx \theta_{1/2}^2$, where $\theta_{1/2}$ is the half width of the particle angular distribution in the coordinate system attached to the residual nucleus, resulted in 0.05-0.1. In the frequency range $\omega \approx \theta_1$ there is no such general relation as (1). The angular distribution in the region of transitions (2 >0, probably has a relatively flat shape. In this case $\sigma(0)/\sigma(\pi/2) \gg 1$. The angular distribution of the subbarrier charged photoparticles in the case of oblate axially deformed nuclei at frequencies of $\omega \approx \omega_1$ has the general form $d\sigma/d\Omega \sim 2 + \sin^2 \vartheta + \Delta^*$. In this case $\Delta' \approx 0.05$ -0.1. $\omega_n < \omega_1$ for oblong nuclei, $\omega_u > \omega_1$ for oblate nuclei. The quadrupole moment can therefore be found from the shape of the angular distribution of the subbarrier charged photoparticles. The laws found here apply not only to photonuclear reactions but also, e.g., to the scattering of high-energy protons through small angles. The basic advantage

Card 2/3

On a method of investigating ...

S/056/62/043/005/044/058 B125/B104

of the present method is that it can be applied to nuclei with any spin including I = 0. Moreover, it is not necessary to confine oneself to alpha-active particles; one can vary the energy of the charged particles, and one has one more distinguished direction. There is 1 figure.

Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED:

June 18, 1962

Card 3/3

LAZAREVA, L.Ye.; TULUPOV, B.A.

A method for studying the optical anisotropy and surface forms of atomic nuclei. Zhur. eksp. i teor. fiz. 43 no.5:1910-1913 N 162. (MIRA 15:12)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR. (Photonuclear reactions)

S/903/62/000/000/038/044 B102/B234

AUTHOR:

Tulupov. B. A.

TITLE:

Raman scattering of Y-quanta from nuclei

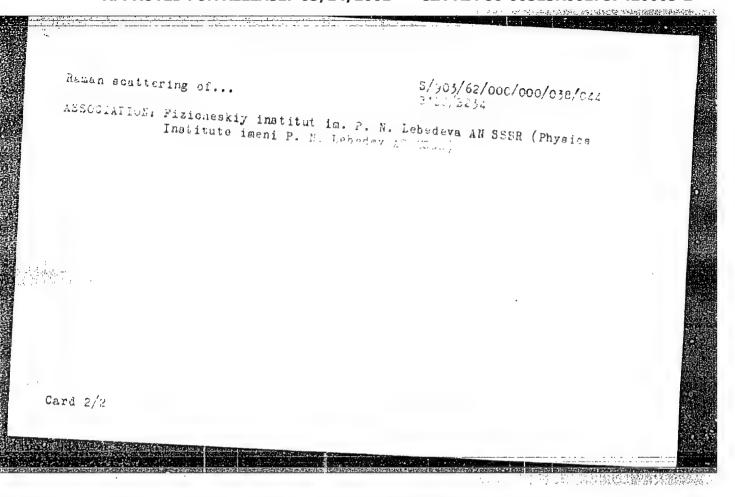
SOURCE:

Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtorby Yslesoyuznov konferentsii, myul' 1960 g. Ed. by A. D. Davydov and otnera. Moscow, Iza-vo AN SSSR, 1952, plb-p09

TEXT: The theory of electric dipole nuclear polarization (Nucl. Phys., 9, 237, 1958) has shown that experiments on elastic photon scattering make it possible to determine scalar and tensor components of nuclear polarization in the case of apins >1/2, but since most of the nuclei have the spins 0 or 1/2 these experiments are not suitable here. In order to find appropriate experiments a theoretical analysis of the lateraction between electromagnetic field and nucleus was carried but with respect to inelastic photon scattering accompanies by the excitation of rotational levels. The calculations and well that an experimental investigation of dagan scattering of the calculation of any ruchel. The error like to the approximation made in the calculation against the second of the calculation and any ruchel.

"APPROVED FOR RELEASE: 03/14/2001 CIA-I

CIA-RDP86-00513R001757420003-2



TULUPOV, L.P., kand.tekhn.nauk; BUYANOV, V.A., inzh.

Compiling the train dispatching plan on an electronic digital computer.

Vest. TSNII MPS 22 no.2:55-59.163. (MIRA 16:4)

(Railraods—Train dispatching) (Electronic digital computers)

VINOGRADOV, A.N.; LIVSHIN, G.L.; OHRAZTSOVA, R.I.; TULUPOV, L.P.;

Prinimali uchastiye: RAZORENOVA, L.K., inzh.; DUBINKINA,
L.I., inzh.; PODGORNYKH, A.L., inzh.; LAVRENT'YEV, K.V.,

retsenzent; MINAKOV, A.D., retsenzent; NESTEROV, Ye.P.,

retsenzent; STEFANOV, N.Ya., retsenzent; USHAKOV, P.S.,

retsenzent; KRISHTAL', L.I., red.; KHITROVA, N.A., tekhn.

red.

[Calculating machines in accounting, planning and administration in railroad transportation] Vychislitel'naia tekhnika v uchete, planirovanii i upravlenii na zheleznodorozhnom transporte. [By] A.N.Vinogradov i dr. Moskva, Transzheldorizdat, 1963. 407 p. (MIRA 17:2)

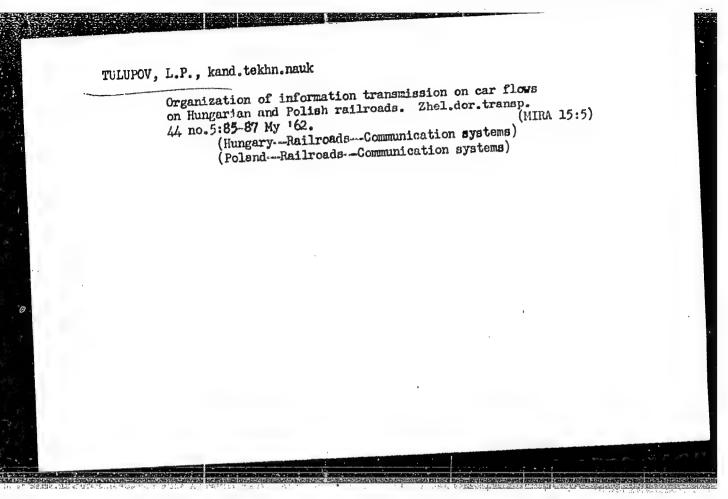
EUYANOV, V.A., assistent; TULUPOV, L.F., nauchnyy sotrudnik

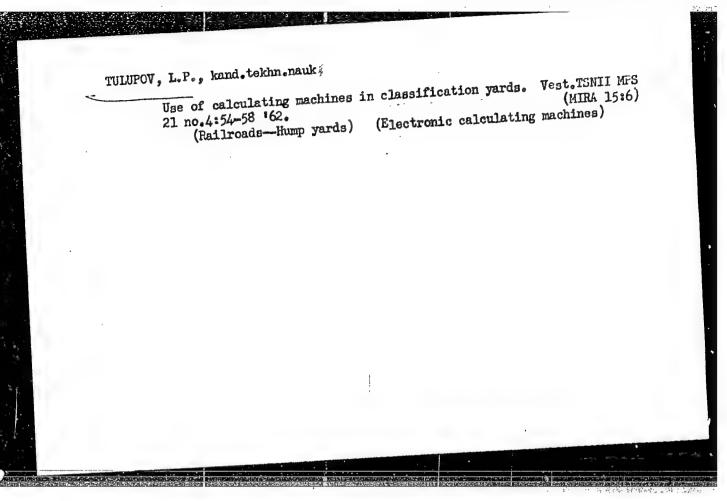
Concerning the question of the automatic control of train movement.

Avtom.telem. i sviaz' 4 no.11:7-8 N '60. (MIRA 13:11)

1. Belorusskiy institut inzhenerov zheleznodorozhnogo transporta (for Buyanor). 2. Otdeleniye vychislitel'noy tekhniki Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Tulupov).

(Emilroads--Train dispatching)





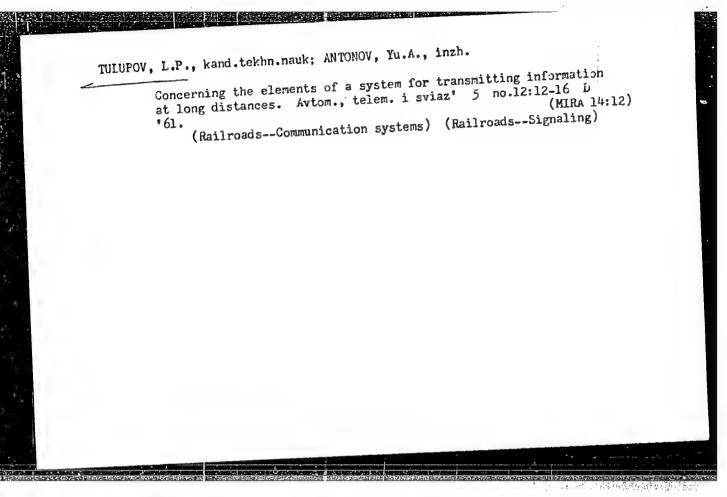
TULUTON, L.P.

TIKHOMIROV, I.G., prof. doktor tekhn. nauk; TULUPOV, L.P.

New textbook ("Organization of train movement in railroad
transport." v.V. Povorozhenko. Reviewed by I. G. Tikhomirov,
L.P. Tulupov. Zhel. dor. transp. 40 no.1:95-96 Ja '58.

(MIRA 11:1)

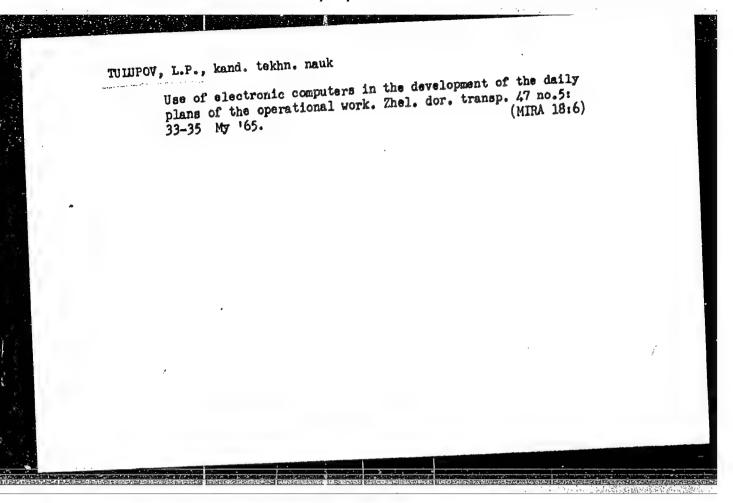
(Railroads--Management)



TIKHOMIROV, I.G., prof., doktor tekhn. nauk; BUYANOV, V.A., ass.; VINNICHENKO, A.V., ass.; MUKHO, P.B., ass.; NEVZOROV, A.V., dots.; TULUFOV, L.P., dots.; SHUL'ZHENKO, P.A., ass.; YARMOLENKO, V.Ye., ass.; Prinimal uchastive PETROV, A.P., prof.; VEREVKINA, N.M., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Traffic organization in railroad transportation]Organization dvizheniia na zheleznodorozhnom transporte; konspekt lektsii. Pod obshchei red. I.G.Tikhomirova. Minsk, Izdvo M.-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSK, 1961. 346 p. (MIRA 15:9)

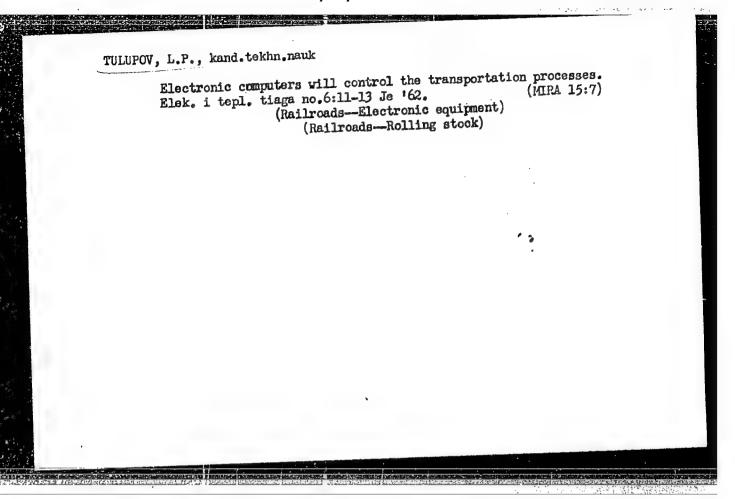
1. Chlen-korrespondent Akademii nauk SSSR (for Petrov). (Railroads—-Traffic)



TULUPOV, L.P., kand.tekhn.nauk; DYKANYUK, M.L., inzh.

Use of electronic computers in the planning of the work of locomotives. Vest.TSNII MFS 24 no.3:15-18 165.

(MIRA 18:8)

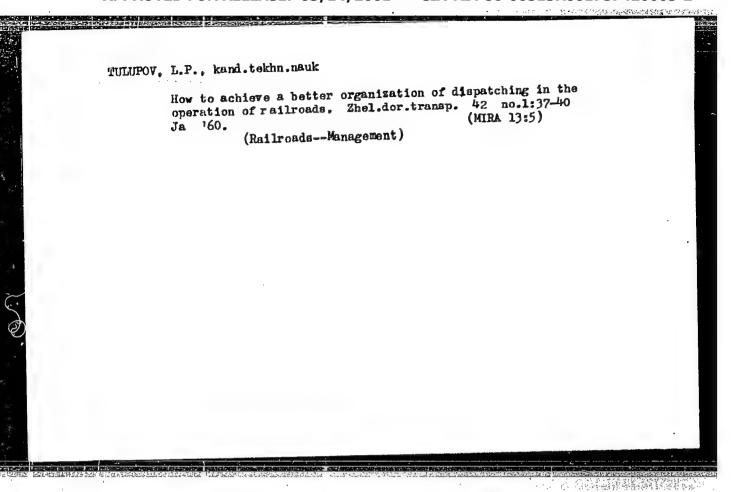


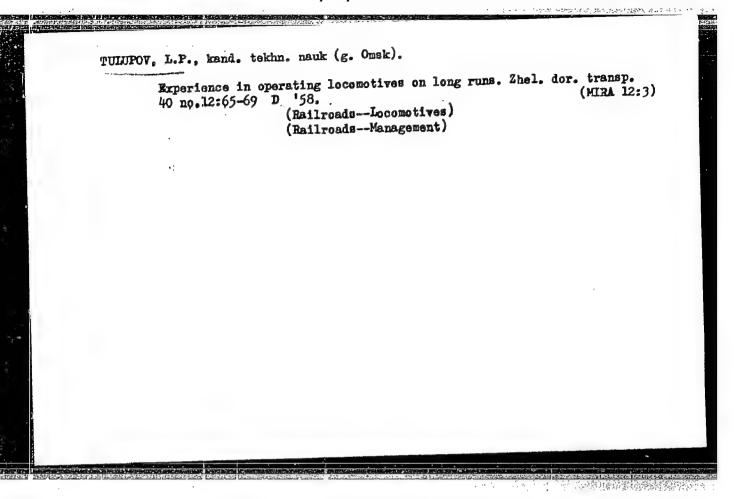
TULUFOV, L.P., kand.tekhn.uauk; LIVSHIN, G.L., inzh..matematik

Use of electronic calculating machines for the prediction of the volume of car flows. Zhel.dor.transp. 43 no.ll:51-54 N '61.

(Electronic calculating machines)

(Railroads...Management)





TIKHOMIROV, I.C., prof., dektor tekhn. nauk; TULUPOV, L.P., kand. tekhn. nauk;

NEVZOROV, A.V., kand. tekhn. nauk; BUYANOV, V.A., inzh.; MUKHO, P.B.,

inzh.; VINHICHERKO, A.V., inzh.; SHUL'ZHERKO, P.A., inzh.; YARMOLERKO;

v.Ye., inzh. (Gomel')

"Organization of railread traffic" by F.P. Kochnev and ethers.

Reviewed by I.C. Tikhomirov and others. Zhel. der. transp. 41

no.4:93-96 Ap '59.

(Railreads-Traffic)

(Kochnev, F.P.)

SYTSKO, P.A. (g. Orsha); TULUFOV, L.P., kand.tekhn.nauk (g. Orsha)

Experience in perfecting operational technology on railroads.
Zhel.dor.transp. 40 no.10:65-69 0 '58. (MIRA 11:12)

1. Nachal'nik Orshanskogo otdeleniya Belorusskoy dorogi (for Sytsko). (Railroads--Management)

TULUPOV, L. P.

TULUPOV, L. P. - "A calculation of the plan for making up trains, taking into account the pass-through and remaking capacities of technical stations".

Moscow, 1955. Min Railways USSR. Moscow Order of Lenin and Order of Labor Red Banner Inst of Railroad Transport Engineers imeni I. V. Stalin.

(Dissertation for the Degree of Candidate of Technical Sciences).

SO: Knizhnava Letopis! No. 46, 12 November 1955. Moscow

TULUFOV, L.P., kand.tekhn.nauk; ANDRIANOV, V.P., inzh.; EUYANOV, V.A., inzh.

Organization of remote-controlled transmission of information to the computing points of railroads. Vest.TSNII MPS 20 no.3:57-61 '61.

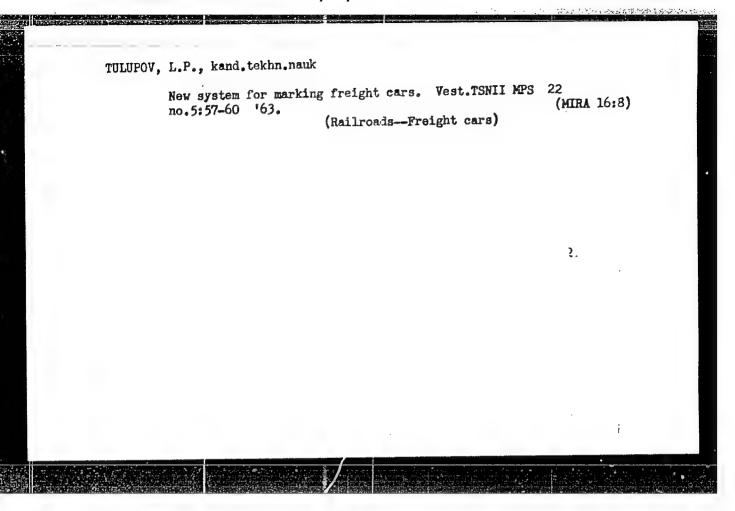
(MIRA 14:5)

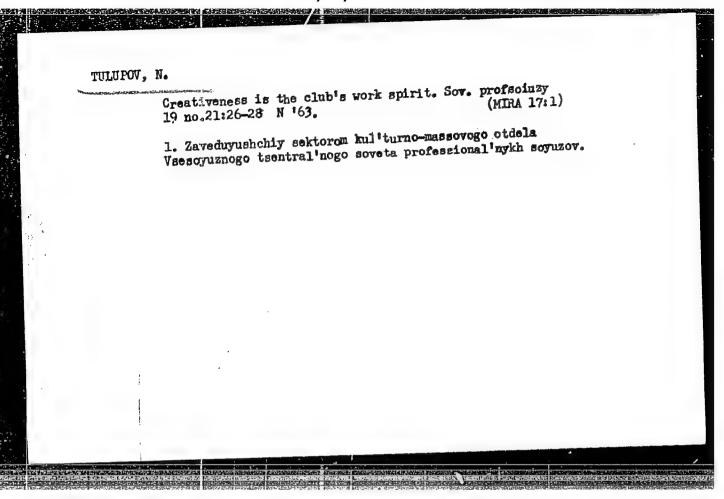
(Railroads-Electronic equipment)

PETROV, A.P., doktor tekhn. nauk, prof.; THEHEOW I.P. kand. tekhn. nauk; KRYUKOV, N.D., kand. tekhn. nauk; GUNDOBIN, V.N., inzh.; VASIL'YEV, G.S., kand. tekhn. nauk; GRISHIN, M.S., kand. tekhn. nauk; MOROZOVA, K.N., inzh.; ROZE, V.A., inzh.; LEVSHIN, G.L., inzh.; BERNGARD, K.A., doktor tekhn. nauk, prof.; BIKCHENTAY, M.A., inzh.; BUYANOV, V.A., inzh.; ILOVAYSKIY, N.D., inzh.; MUKHAMEDOV. G.A., kand. tekhn.nauk; MIROSHNICHENKO, A.P., inzh.; ANDRIANOV, V.P., inzh.; BUTS, V.D., inzh.; KAZIMOV, A.A., inzh.; KIREYEV, O.P., inzh.; DYUFUR, S.L., kand. tekhn. nauk; USTINSKIY, A.A., kand. tekhn. nauk; MIKHAYLOV, S.M., inzh.; NESTEROV, Ye.P., kand. tekhn. nauk; retsenzent; LIVSHITS, V.N., inzh., retsenzent; PREDE, V.Yu., inzh., red.; VOROTNIKOVA, L.F., tekhn. red.

[Control of transportation processes using electronic digital computers] Upravlenie perevozochnym protsessom s primeneniem elektronnykh tsifrovykh vychislitel nykh mashin. Pod obshchei red. A.P.Petrova. Moskva, Transzheldorizdat, 1963. 207 p. (MIRA 16:8)

1. Chlen-korrespondent AN SSSR (for Petrov).
(Railroads--Management) (Electronic digital computers)





TULUPOV, P.I., mashinist

Some methods for working on the TE3 diesel locomotive. Elek. i tepl. tiaga no.6:37-38 Je '62. (MIRA 15:7)

Depo L'vov-Zapadnyy.
 (Diesel locomotives—Maintenance and repair)

POLJANSKIJ, N.G. [Polyanskiy, N.G.]; TÜLÜPOV, P.Je. [Tulupov, P.E.]

Methods of determining the thermal resistance of strongly acid cation exchange resins in organic liquids. Chem prum 13 no.10: 550-553 0 '63.

1. Novokujbysevska pobocka vedecko-vyzkumneho ustavu syntetickych alkoholu a organickych latek, Novokujbysevsk.

Thermal stability and catalytic activity of the MU-1 sulfophencMormaldehyde cation exchanger in hydrocarbons. Zhur. prikl. khim. 37 no.12:2686-2692 D '64. (MIRA 18:3)

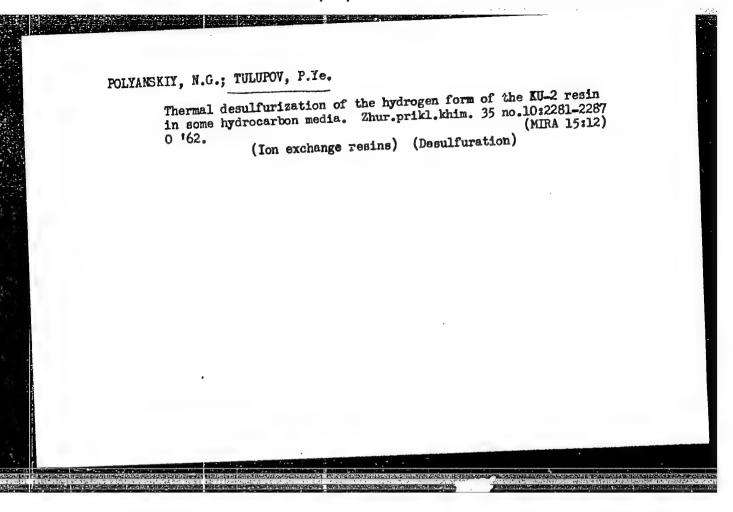
APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2"

POLYANSKIY, N.G.; TULUPOV, P.Ye.; SADOVSKAYA, G.K.; SLOVOKHOTOVA, N.A.

Mechanism of thermal desulfuration of the hydrogen form of ion exchanger KU-2 in hydrocarbon media. Zhur. prikl. khim. 38 no.4: 910-918 Ap '65. (MIRA 18:6)

1. Novokuybyshevskiy filial nauchno-issledovatel'skogo instituta sinteticheskikh spirtov i organicheskikh produktov i Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni Karpova, Moskva.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2"



POLYANSKIY, N.G.; TULUPOV, P.Ye.; FEDOROV, Ye.F.

Ion exchange resins as catalysts for polymerization of unsaturated hydrocarbons. Kin.i kat. 3 no.1:162 '62. (MIRA 15:3)

1. Nauchno-issledovatel skiy institut sinteticheskikh spirtov i organicheskikh produktov, Novokuybyshevskiy filial. (Ion exchange resins) (Polymerization) (Olefins)

POLYANSKIY, N.G.; TULUPOV, P.Ye.

Effect of the moisture content of the cation exchanger KU-2 on its stability and catalytic activity in the presence of hydrocarbons. Zhur. prikl. khim. 36 no.10:2244-2251 0 '63. (MIRA 17:1)

1. Novokuybyshevskiy filial Nauchno-issledovatel'skogo instituta sinteticheskikh spirtov i organicheskikh produktov.

TULUPOV, P. Yo.; Prinimala uchastiye STREL'NIKOVA, N. I.

Chromatographic determination of impurities of C4 hydrocarbons in the methane-hydrogen fraction. Zav. lab. 28 no.12:1430-1431 162. (MIRA 16:1)

1. Novokuybyshevskiy filial nauchno-issledovatel'skogo instituta sinteticheskikh spirtov i organicheskikh produktov.

(Hydrocarbons) (Chromatographic analysis)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2"

TULUPOV, P.Ye.

Heat resistance of various sulfonated cationites in a medium of tertiary amylenes. Zhur_fiz_khim. 39 no.11:2708-2713 N '65. (MIRA 18:12)

1. Nauchno-issledovatel'skiy institut sinteticheskikh spirtov i organicheskikh produktov, Novokuybyshevskiy filial.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757420003-2"

NIKOLAYEV, Lev Aleksandrovich; TULUPOV, Vladimir Alekseyevich;
Prinimal uchastiye LUNIN, M.A., dots.; ALAVERDOV, Ya.G.,
red.; STUKOVNIN, N.D., red.

[Physical chemistry] Fizicheskaia khimiia. Moskva, Vys-shaia shkola, 1964. 440 p. (MIRA 17:9)

USSR/Chemistry - Plastics

FD-1206

Card 1/1

Pub. 129-9/19

Author

: Shuykin, N. I.; Tulupov, V. A.

Title

: The behavior of the geometric isomers of piperylene to ultraviolet

illumination

Periodical

: Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No. 5., 91-95,

Aug 1954

Abstract

: Established the fact that the cis- and trans-isomers of piperylene can be converted from one to the other under the action of ultra-

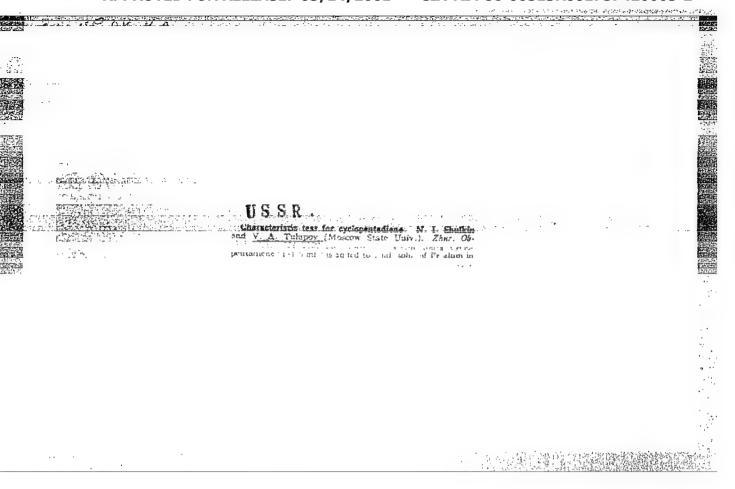
violet light. Also established the approximate composition of the equilibrium mixture. Demonstrated the effect of powdered silver in

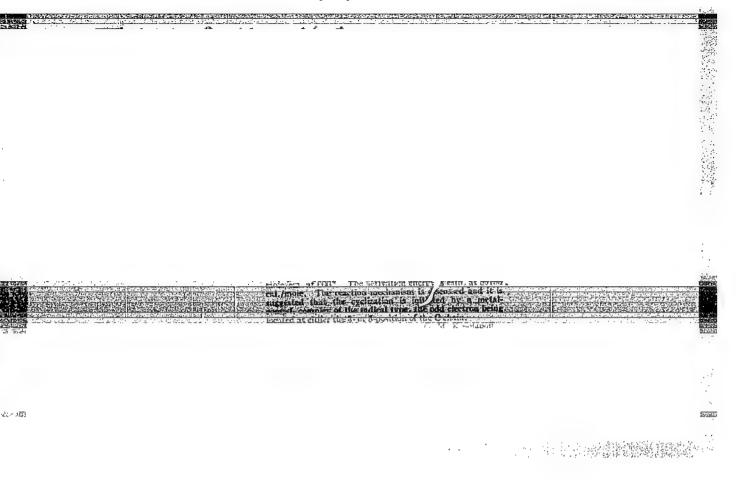
this conversion. Fifteen references (two USSR).

Institution : Chair of Petroleum Chemistry

Submitted

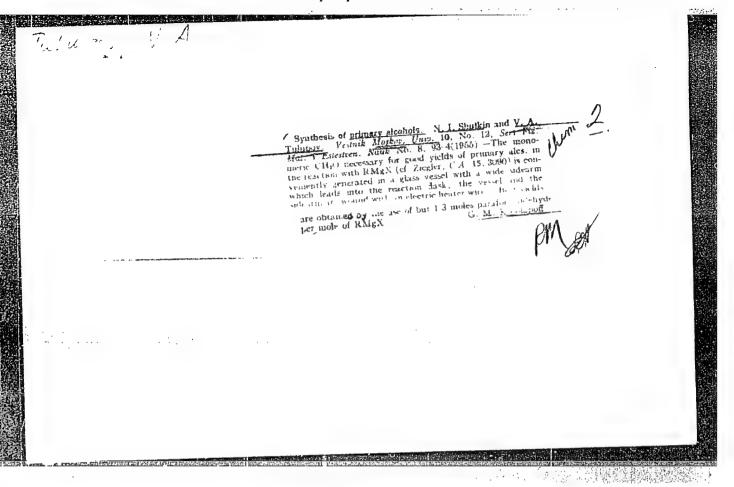
: March 25, 1954





"APPROVED FOR RELEASE: 03/14/2001

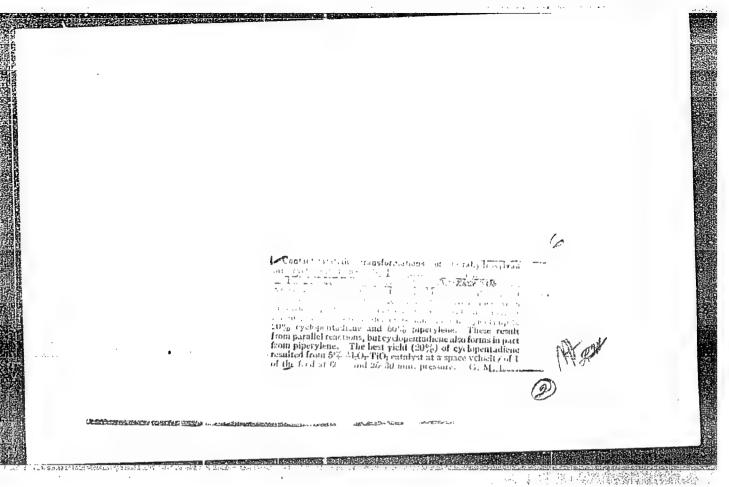
CIA-RDP86-00513R001757420003-2



SHUYKIN, N.I.; TULUPOV, V.A.; BEL'SKIY, I.F.

On the hydration of the furan ring. Zhur.ob.khin.25 no.6:11751178 Je'55.

1. Moskovskiy Gosudarstvennyy universitet
(Furan) (Hydration)



Jungov, V. A

USSR/ Chemistry - Hydrotarbon conversion

Card 1/1

Pub. 22 - 32/60

Authors

Shuykin, N. I., Memb. Corresp. of Acad. of Sc., USSR.; and Tulupov, V. A.

Title

The kinetics of piperylene conversion into cyclopentadiene

Periodical

Dok. AN SSSR 100/4, 731-733. Feb 1, 1955

Abstract

The kinetics of C5H8 conversion into C5H6 was investigated to determine the nature of the C5H8 cyclization process. It was established that the yield of C5H6 at temperatures of 600° and pressures of 50 mm depends upon the presence and nature of he catalyst and that the cyclization process is quite complicated leading to the formation of pentenes, pentanes and gases (in addition to C5H6), which are formed as result of cracking of the basic C5H8 and probably also as result of secondary conversion of the pentanes and pentenes. The conversion reaction was found to be catalytic and the activation energy was estimated at 59105 cal/mol. Three references: 2 USSR and 1 English (1948 and 1950). Table.

Institution :

The M. V. Lemonosov State University, Moscow

Submitted

September 3, 1954

Name: TULUPOV, V. A.

Dissertation: Study of methods for a catalytic synthesis of cyclopentadiene

Degree: Cend Chem Sci

Min Higher Education USSR, Moscow Inst of Fine Chemical

Technology imeni M. V. Lomonosov

Defense Date, Place: 1956, Moscow

With the state of the state of

Source: Knizhnaya Letopis', No 51, 1956

SHUYKIN, N.I.; TULUPOV, V.A.

Pessible formation of cyclepentadiene from heterocyclic compounds with five carbon atoms in a melecule. Inv.AN SSSR Otd.khim.nauk no.2:213-219 F *56. (MLRA 9:7)

l. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonesova. (Cyclopentadiene)

V. 19.

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.

B-9

Catalysis

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11293

: Shuykin N.I., Tulupov V.A. : Moscow University Author

Inst : On Catalytic Hydrogenation of Pyridine Title

: Vestn. Mosk. un-ta, 1956, No 3, 73-79 Orig Pub

Abstract

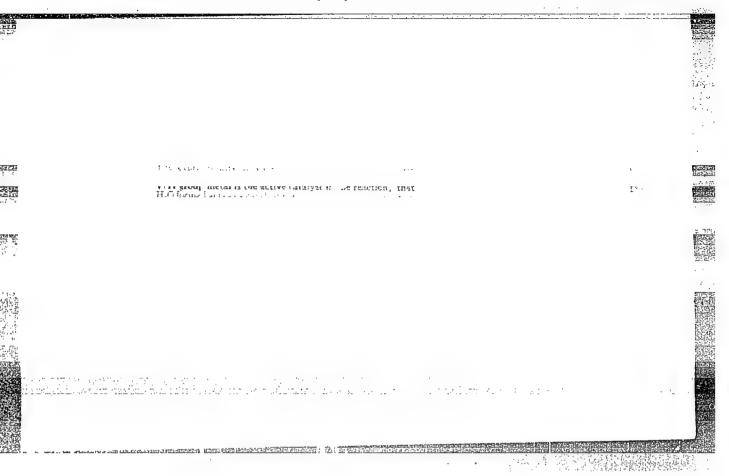
: A study was made of hydrogenation of pyridine under flow conditions at space velocity 0.1 hour on skeleton Ni-catalyst (prepared from an alloy 73% Al + 27% Ni), having an excess H2. It is shown that besides piperidine there are formed 1-aminopentane, pyrrole, alpha-, beta- and gammapicoline and alpha-aminopyridine. There is proposed a mechanism of formation of the reaction by-products over the groups CH2, CH3, NH2, C5H4NT and

H atoms.

1/1

1,011







76-32-3-42/43

AUTHOR:

Tulupay, V. A.

TITLE:

The Kinetics of Hydration of Cyclopentane with the Marie Ica as a Catalyst (Kinetika gidriroveniya tsiklopentana & loome

Mr. *2 v kackestve katalizatora)

PERIODICAL:

Zhurzal Fizishoakey Wandi, 1958, Vol. 32, Nr 3, Nr. 777-729 (USSR)

ABSTRACT:

In commention with a paper that investigated catalytic reactions with unsaturated compounds, the reaction mentioned in the title is studied in the paper under review. Manganess stearate, discilled in paraffle oil, is used as a catalyst. Data of the preparation of the initial substances are given and from a drawing, it is seen that the arrangement used possesses a restrict vessel, which is located in a thermatat, and which is shaken thering the experiment. The byfings is led through the usual parifying vessels and measured with mercury in a burst at fixed temperature. The experiments were performed at 25, 30, 36, 38 and 39°C. In the investigations during the reaction, the formation of a manganess complex was

Card 1/2

76-32-3-41/43 The Kinetics of Hydration of Cyclopentens With the Mc⁴² Ion as a Catalyst

chemist which described results are graphically represented from which is to be seen that the nature of the resulten process does not change with a midification of quantification of the estation of the resident of the estate. Forthermore, the resident does not take place at the surface of the reseal, but homogeneously in the interior. The surge of the incompanionalisms of the depth of transformation does not change with temperature. Finally it is suiced that the partitions take place with an activation surger of the energy of heterogeneous estalytic hydrogeneous of unsaturated companie. The value of the energy changes with the consentration of estalyst, values for this being given. The submet thanks Profession to think he for this partition. The submet thanks Profession to think he for this being given. The submet thanks Profession to think he for this being given.

ASSOCIATION:

Vacuoyumnyy machingy machinestroital opy inchint, Mediwa (Monow, All-Union Commenpondense Machine-Sometraction Inchitute)

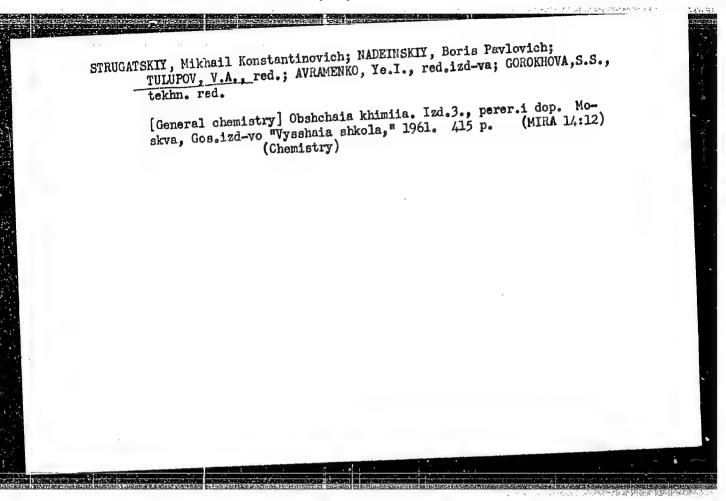
SUBMITTED:

8estaber 29, 1957

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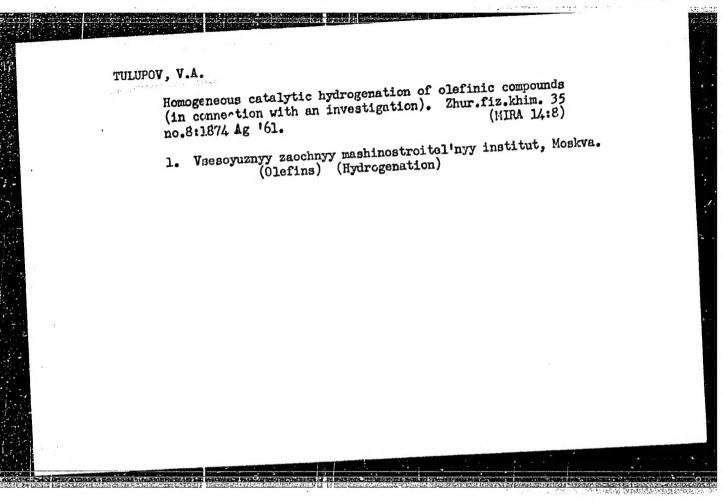
Card 2/2



TARASOVA, Ye.M. [deceased]; TULUPOV, V.A.

Reduction of acetylcyclohexane by the Kishner reaction. Zhur.ob.
(MIRA 14:6)'
khim. 31 no.6:1936-1941 Je '61.

1. Moskovskiy gosudarstvennyy universitet 1 Vsesoyuznyy zaochnyy
mashinostroitel'nyy institut.
(Cyclohexane)



TULUI	POV, V.A.
	Homogeneous catalytic hydrogenation. Part 1: Kinetics of cyclohexene hydrogenation in the presence of Cr (III). Zhur. fiz.khim. 36 no.8:1617-1623 Ag '62. (MIRA 15:8)
	1. Vsesoyuznyy zaochnyy mashinostroitel'nyy institut. (Gyclohexene) (Hydrogenation) (Chemical reaction, Rate of)
	(Chemical reaction, 1
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TITLE:

A new equation of state for gases

PERIODICAL:

Zhurnal fizicheskoy khimii, v. 37, no. 2, 1963, 284-289

TEXT: An equation of state is derived for gases based on the assumption that a change of the state of aggregation is accompanied by a change of composition in molecular complexes which contain more particles in liquid and solid state than in gaseous state. The transition gas - liquid - solid is thus connected with a reduction in the number of single particles and in the number of complexes made up of few particles; also with an increase in the number of complexes comprising many particles. $\sum T_i x_i x_i(T) = RT$ is written, where $\chi_{\underline{i}}$ are the generalized forces acting upon the coordinates xi. In the case of a gas, the forces acting in the system are the pressure p and the interaction forces X11 between single particles, X1j between individual particles and complexes of j particles, Xii between complexes Card 1/3

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with equal and X_{ij} between those with unequal number of particles. A matrix is set up for the total of these forces and, since $X_{ij} = X_{ji}$, the sum of the forces is set equal to the total of the diagonal elements. For the, internal forces $X_{11} = a_{11}^0 e^{\lambda/RT}/v^2$, ..., $X_{jj} = a_{jj}^0 e^{\lambda/RT}/v^2$ hold, where a_{11}^0 , ..., a_{jj}^0 are coefficients of proportionality. The final result obtained as: $(p + \sum_{jj} a_{jj}/v^{2j} + \sum_{ij} a_{jj}/v^{i+j})(v - v_0) = RT$, where

 $a_{jj} = a_{jj}^{0} + a_{ij}^{0} = a_{ij}^{0}$. The difference between this equation and the equation of Van der Waals (for which j = 1) is that with j = 1 only two metastable regions exist on the p,v curve, whereas the equation suggested allows for a variety of metastable states. It is proved that transition from one stable state into another can take place either by passing through one metastable state any number of times, or by passing through a plurality of metastable states. With a multiplicity j of the complexes, the Card 2/3